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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,901	11/07/2001	David L. Morgan	22503-05564	8515

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FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

EXAMINER	
CHEN, PO WEI	
ART UNIT	**PAPER NUMBER**
2676	12

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/004,901	MORGAN ET AL.	
	Examiner	Art Unit	
	Po-Wei (Dennis) Chen	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *June 07, 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-66* is/are pending in the application.

4a) Of the above claim(s) *58-60 and 62* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-57, 61 and 63-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

In response to an Amendment received on June 07, 2004. This action is final.

Claims 36-66 are pending in this application. Claims 36, 58, 61-63 and 66 are independent claims.

The present title of the invention is "Rendering Non-Interactive Three-Dimensional Content".

The Group Art Unit of the Examiner case is now 2676. Please use the proper Art Unit number to help us serve you better.

Election/Restrictions

1. Applicant's election of Group I (clams 36-57 and 61) in the reply filed on June 07, 2004 is acknowledged.

2. This application contains claims 58-60 and 62 are drawn to an invention nonelected in Paper No. 11. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 40 recites the limitation "the rendering statistics" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 36-40, 47-49, 61, 63-64 and 66 are rejected under 35 U.S.C. 102(e) as being anticipated by Rose et al. (US 6,476,802; refer to as Rose herein).

8. Regarding claims 36-40, 47-49, Rose discloses a dynamic replacement of 3D content method comprising:

A method for optimizing non-interactive three-dimensional content for playback on a target device (lines 12-45 of column 3);

Applying a first optimization to the content to obtain a first optimized result, the first optimization associated with a model of the target device; comparing the first optimized result against ideal results to determine a first error measurement; responsive to the error measurement exceeding a threshold: applying a second optimization tot the content to obtain a second optimized result, the second optimization associated with the target device; and comparing the second optimized result against the ideal results to determine a second error measurement, the second measurement not exceeding the threshold; the rendering statistics include a rendering time; the first optimization includes deletion of unused data or delaying of rendering of data; the first optimization includes using pre-computed runtime parameters; the first optimization includes optimizing assets

(lines 9-17 of column 5, lines 12-19 of column 6, lines 22-55 of column 7 and line 31 of column 11 to line 52 of column 14 and Fig. 7-11; In the case for optimizing the streaming of the 3D content over the Internet (model of target device), key reduction on the content (asssets) is being implemented. And in the case where the maximum variance error is greater than the threshold, a number of optimization process will be repeated in order maintain an acceptable level of quality; in Fig. 11, each frame has a time to indicate rendering).

Applying a third optimization to the content to obtain a third optimized result, the third optimization associated with a delivery infrastructure; the delivery infrastructure is the Internet; the delivery infrastructure is a computer readable medium (lines 9-17 of column 5, lines 22-55 of column 7 and line 53 of column 14 to line 14 of column 15 and lines 19-67 of column 26 and Fig. 10, 12 and 15; Based on detected delivery infrastructure such as Internet bandwidth or computer readable medium CD, different scalability is being implemented in animation optimization to further reduce the number of keyframes).

9. Regarding claim 61, statements presented above, with respect to claim 36 are incorporated herein.

10. Regarding claims 63-64, Rose discloses a dynamic replacement of 3D content method comprising:

A system for optimizing non-interactive three-dimensional content for playback on a target device (lines 12-45 of column 3);

An import unit for receiving content data (Fig. 1);

A target-specific optimization unit, communicatively coupled to the import unit, for producing three-dimensional scene descriptions, the scene descriptions optimized according to the target device (lines 16-45 of column 3 and lines 22 of column 7 to line 38 of column 8 and Fig. 1);

The target-specific optimization unit includes the target device (lines 23-47 of column 7 and Fig. 1).

The target-specific optimization unit includes a simulation of the target device (line 17 of).

11. Regarding claim 66, statements presented above, with respect to claim 63 are incorporated herein.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 42-44, 46, 50 and 52-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US 6,476,802; refer to as Rose herein).

14. Regarding claims 42-44, 46, 50 and 52-57, Rose discloses a dynamic replacement of 3D content method comprising:

Performing a pixel coverage analysis (lines 33 of column 15 to line 67 of column 16; it is noted that the pixel is being rendered to determine the visibility or coverage).

The optimization includes microcode generation optimization (lines 1-65 of

column 17; the term microcode is broad enough to include the texture parameters being calculated to be applied on the object image).

The optimization includes injecting corrective data (lines 1-65 of column 17; the term corrective data is broad enough to include the correct texture being mapped on the object image).

The optimization includes an image based rendering technique (lines 15-25 of column 15).

The optimization includes texture creation (lines 53 of column 14 to line 14 of column 15 and line 1 of column 17 to line 26 of column 18).

The optimization includes manipulating geometry of content objects (lines 3-30 of column 27).

The optimization includes visibility determination of objects within the image (lines 53 of column 14 to line 14 of column 15).

The optimization includes compression (lines 21-32 of column 21).

Storing the second optimized result in a streaming format (lines 44 of column 4 to line 17 of column 5 and lines 21-59 of column 7).

The optimized results include pixels (lines 33-51 of column 15).

The optimized results include rendering statistics (lines 22-34 of column 7).

While Rose does not specify the optimizations are performed as the first optimization. It would have been obvious to one of ordinary skill in the art to realize that all of the optimizations can be considered as one optimization process to create appropriate version of 3D content for displaying at various target platforms (lines 49-58 of column 4 and lines 22-34 of column 7).

15. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US 6,476,802; refer to as Rose herein) as applied to claim 36 above, and further in view of Khoury (US 6,400,841).

16. Regarding claim 41, Rose does not disclose performing an RMS error analysis. Khoury discloses a method for evaluating three-dimensional rendering system utilizing the method (lines 32-48 of column 1). It would have been obvious to one of ordinary skill in the art to modify Rose by substitute the error calculation of Khoury for the error calculation of Rose because Khoury teaches that by utilizing the method would provide fast process of evaluating error in comparing images (lines 32-48 of column 1).

17. Claims 45 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US 6,476,802; refer to as Rose herein) as applied to claim 36 above, and further in view of Stroyan (US 5,923,333).

18. Regarding claims 45 and 51, Rose does not disclose scheduling object rendering and reordering of objects to be rendered; shading computations. Stroyan discloses a fast rendering method utilizing the method (lines 25-63 of column 3 and color blending corresponds to shading computations). It would have been obvious to one of ordinary skill in the art to utilize the teaching of Stroyan to provide an improved rendering processing for a higher quality image (lines 14-22 of column 3 of Stroyan).

19. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al. (US 6,476,802; refer to as Rose herein) as applied to claim61 above, and further in view of Ando et al. (JP 11238004; refer to as Ando herein).

20. Regarding claim 65, Rose does not disclose a simulation of the target device. Ando teaches a system simulator utilizing the device (lines 1-24 of abstract). It would

have been obvious to one of ordinary skill in the art to utilize the teaching of Ando to provide an improved development process of the processing system such as one disclosed by Rose (lines 16-24 of abstract of Ando).

Response to Arguments

21. Applicant's arguments with respect to claims 36-57, 61, 63-66 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Po-Wei (Dennis) Chen whose telephone number is (703) 305-8365. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Po-Wei (Dennis) Chen
Examiner
Art Unit 2676

Po-Wei (Dennis) Chen
August 18, 2004

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600